AMENDMENTS TO CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application.

1. (Currently amended) Receiver (1) for receiving frequency signals, the receiver (1) comprising:

a processing stage (10) for converting the frequency signals into baseband signals comprising preamble symbols (SP,LP) and data symbols (D1,D2) and for processing the baseband signals; and

a synchronisation stage (20) for synchronising the processing stage (10) and comprising a first part (23) for performing a coarse time synchronisation and a second part (24) for performing a fine time synchronisation, wherein the first part comprises an autocorrelating unit for autocorrelating samples of a group of preamble symbols (t1,t2,t3), wherein the second part comprises a crosscorrelating unit for crosscorrelating samples of a further group of preamble symbols (t10,G1) with predefined samples, and wherein the result of the autocorrelating the samples of the group of preamble symbols by the autocorrelating unit is not used by the crosscorrelating unit for the crosscorrelating the samples of the further group of preamble symbols with the predefined samples.

2. (Currently amended) Receiver (1) according to claim 1, wherein the synchronisation stage (20) comprises a third part (25) for performing a coarse frequency synchronisation through detecting and accumulating phases of samples of a yet further group of preamble symbols (t8,t9).

3. (Currently amended) Receiver (1) according to claim 2, wherein the yet further group of preamble symbols (t8,t9) is situated between the group of preamble symbols (t1,t2,t3) and the further group of preamble symbols (t10,G1).

4. (Currently amended) Receiver (1) according to claim 3, wherein the third part (25) is configured to perform a fine frequency synchronisation through detecting and accumulating phases of samples of another group of preamble symbols (T1,T2) following the further group

of preamble symbols (t10,G1).

5. (*Currently amended*) Receiver (1) according to claim 2, wherein the processing stage (10) comprises a fourth part for performing an automatic gain control after the coarse time synchronisation and before the coarse frequency synchronisation.

6. (*Currently amended*) Receiver (1) according to claim 1, wherein the processing stage (10) comprises:

a mixing unit (11) for converting the frequency signals into the baseband signals; and

a transformating unit (12) coupled to an output of the mixing unit (11) for processing the baseband signals;

with the synchronisation stage (20) comprising

a buffering unit (21) coupled to the output of the mixing unit (11) for buffering at least a part of the baseband signals; and

a controlling unit (22) coupled to control inputs of the mixing unit (11) and the transformating unit (12) for controlling the mixing unit (11) and the transformating unit (12);

with inputs of the first part (23) and the second part (24) being coupled to an output of the buffering unit (22) and with an output of the first part (23) being coupled to a first input of the controlling unit (22) and with an output of the second part (24) being coupled to a second input of the controlling unit (22).

7. (*Currently amended*) Receiver (1) according to claim 6, wherein the autocorrelating unit (31) is coupled to the input of the first part (23), and wherein the first part further comprises an integrating unit (32) coupled to an output of the autocorrelating unit (31), a first delaying unit (33) coupled to an output of the integrating unit (32), a scaling unit (34) coupled to an output of the first delaying unit (33), a deciding unit (35) coupled to outputs of the scaling unit (34) and the integrating unit (32), a second delaying unit (36) coupled to an output of the deciding unit (35), and logical units (37,38) situated between an output of the second delaying unit (36) and the output of the first part (23).

8. (*Currently amended*) Receiver (1) according to claim 7, wherein a third part (25) for

performing a coarse frequency synchronisation and for performing a fine frequency synchronisation comprises a phase detecting unit ~~(51)~~ coupled to the output of the autocorrelating unit ~~(31)~~ and a phase accumulating unit ~~(52)~~ coupled to an output of the phase detecting unit ~~(51)~~, with an output of the phase accumulating unit ~~(52)~~ being coupled to a third input of the controlling unit ~~(22)~~.

9. (*Currently amended*) Receiver ~~(1)~~ according to claim 6, wherein the crosscorrelating unit ~~(41)~~ is coupled to the input of the second part ~~(24)~~, and wherein the second part further comprises an absolute value unit ~~(44)~~ coupled to an output of the crosscorrelating unit ~~(41)~~, an integrating unit ~~(42)~~ coupled to the input of the second part ~~(24)~~, a scaling unit ~~(43)~~ coupled to an output of the integrating unit ~~(42)~~, a deciding unit ~~(45)~~ coupled to outputs of the absolute value unit ~~(44)~~ and the scaling unit ~~(43)~~, with an output of the deciding unit ~~(45)~~ being coupled to the output of the second part ~~(24)~~.

10. (*Currently amended*) System ~~(60)~~ comprising a processor ~~(61)~~ and a receiver ~~(1)~~ for receiving frequency signals, the receiver ~~(1)~~ comprising:

a processing stage ~~(10)~~ for converting the frequency signals into baseband signals comprising preamble symbols ~~(SP,LP)~~ and data symbols ~~(D1,D2)~~ and for processing the baseband signals; and

a synchronisation stage ~~(20)~~ for synchronising the processing stage ~~(10)~~ and comprising a first part ~~(23)~~ for performing a coarse time synchronisation and a second part ~~(24)~~ for performing a fine time synchronisation, wherein the first part comprises an autocorrelating unit for autocorrelating samples of a group of preamble symbols ~~(t1,t2,t3)~~, wherein the second part comprises a crosscorrelating unit for crosscorrelating samples of a further group of preamble symbols ~~(t10,G1)~~ with predefined samples, and wherein the result of the autocorrelating the samples of the group of preamble symbols by the autocorrelating unit is not used by the crosscorrelating unit for the crosscorrelating the samples of the further group of preamble symbols with the predefined samples.

11. (*Currently amended*) Synchronisation stage ~~(20)~~ for use in a receiver ~~(1)~~ for receiving frequency signals, the receiver ~~(1)~~ comprising:

a processing stage (10) for converting the frequency signals into baseband signals comprising preamble symbols (SP,LP) and data symbols (D1,D2) and for processing the baseband signals; and

the synchronisation stage (20) for synchronising the processing stage (10) and comprising a first part (23) for performing a coarse time synchronisation and a second part (24) for performing a fine time synchronisation, wherein the first part comprises an autocorrelating unit for autocorrelating samples of a group of preamble symbols (t1,t2,t3), wherein the second part comprises a crosscorrelating unit for crosscorrelating samples of a further group of preamble symbols (t10,G1) with predefined samples, and wherein the result of the autocorrelating the samples of the group of preamble symbols by the autocorrelating unit is not used by the crosscorrelating unit for the crosscorrelating the samples of the further group of preamble symbols with the predefined samples.

12. (*Currently amended*) Method for receiving frequency signals, the method comprising:

converting the frequency signals into baseband signals comprising preamble symbols (SP,LP) and data symbols (D1,D2) and processing the baseband signals; and

synchronising the converting and/or the processing via performing a coarse time synchronisation and via performing a fine time synchronisation, wherein the performing the coarse time synchronisation comprises autocorrelating samples of a group of preamble symbols, wherein the performing the fine time synchronisation comprises crosscorrelating samples of a further group of preamble symbols (t10,G1) with predefined samples, and wherein the result of the autocorrelating the samples of the group of preamble symbols is not used for the crosscorrelating the samples of the further group of preamble symbols with the predefined samples.

13. (*Currently amended*) Processor program product for receiving frequency signals, the processor program product comprising:

converting the frequency signals into baseband signals comprising preamble symbols (SP,LP) and data symbols (D1,D2) and processing the baseband signals; and

synchronising the converting and/or the processing via performing a coarse time synchronisation and via performing a fine time synchronisation, wherein the performing the

coarse time synchronisation comprises autocorrelating samples of a group of preamble symbols, wherein the performing the fine time synchronisation comprises crosscorrelating samples of a further group of preamble symbols ~~(t10,G1)~~ with predefined samples, and wherein the result of the autocorrelating the samples of the group of preamble symbols is not used for the crosscorrelating the samples of the further group of preamble symbols with the predefined samples.[[.]]

14. (*Currently amended*) Receiver ~~(1)~~ according to claim 1, wherein the further group of preamble symbols comprises a short preamble symbol and a long preamble symbol.

15. (*Currently amended*) Receiver ~~(1)~~ according to claim 14, wherein the long preamble symbol is a guard interval preamble symbol.

16. (*Currently amended*) Receiver ~~(1)~~ according to claim 15, wherein the crosscorrelating unit comprises a crosscorrelator configured to use samples of the guard interval preamble symbol as the predefined samples and to crosscorrelate the predefined samples with the samples of the further group of preamble symbols.

17. (*Currently amended*) Receiver ~~(1)~~ according to claim 1, wherein the first part is configured to perform the coarse time synchronisation independently from the level of the baseband signals.

18. (*Currently amended*) Receiver ~~(1)~~ according to claim 7, wherein the integrating unit comprises an integrator configured to perform an envelope detection on the result of the autocorrelating unit.

19. (*Currently amended*) Receiver ~~(1)~~ according to claim 18, wherein the first delaying unit comprises a first delay line configured to delay the envelope of the envelope detection to generate a delayed envelope, the scaling unit comprises a multiplier configured to multiply the delayed envelope with a multiplication factor to generate a multiplied and delayed envelope, and the deciding unit comprises a comparator configured to compare the envelope of the envelope detection with the multiplied and delayed envelope.

20. (*Currently amended*) Receiver (1) according to claim 9, wherein the integrating unit comprises a sliding window integrator configured to generate an average value of the samples of the further group of preamble symbols and the scaling unit comprises a multiplier configured to multiply the average value of the samples of the further group of preamble symbols with a multiplication factor to generate a threshold value for the deciding unit.